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| 10/616,580 | 07/10/2003 | Tom Graczyk | P00911-US | 1331 |

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EXAMINER

SCHWARTZ, PAMELA R

ART UNIT PAPER NUMBER

1774

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,580

Applicant(s)

GRACZYK ET AL.

Examiner

Pamela R. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Applicant's election without traverse of Group I in the reply filed on June 30, 2005 is acknowledged.

2. Claims 1-10, 15, 16, 19, 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght et al (6,887,536). The reference discloses a subbed polyester support having an adhesion promoting layer and an ink receiver layer on the surface thereof. The ink receiver layer composition must contain a cationic inorganic compound, a cationic polymer, or a mixture of the two (see col. 7, line 38-42). Silica may be used if it is treated to be cationic and the section refers back to the description of silica for the adhesion promoting layer which includes disclosure of commercially available silicas that are cationic or made cationic (see col. 7, line 58 to 63 and col. 5, line 63 to col. 6, line 11). Disclosed silica includes those with average particle sizes of 15 to 40 nm and silica that has .3 to 1.3% alumina present (see col. 5, line 60 to col. 6, line 49).

Disclosed cationic polymers include cationic polyurethane (see col. 8, lines 44-48). The ratio of components is not disclosed, but it would have been obvious to one of ordinary skill in the art to determine the ratio of pigment to binder based upon the materials used and the results desired such as layer thickness, adhesion characteristics, absorption properties, etc.

Cationic acrylic or vinyl alcohol polymers may be present in the composition and it would have been obvious to one of ordinary skill in the art to include ones that are water soluble or dispersible since such materials are used as alternative binders in the art (see col. 7, lines 39-49 and col. 8, line 44 to col. 9, line 43).

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Additives may be included (see col. 9, lines 44-34). It is noted that the composition disclosed for the adhesion promoting layer is also considered to meet the composition claims and claims to an ink receptive layer on a substrate because this layer will inherently be ink receptive (see col. 4, line 21 to col. 7, line 37). This layer composition may include cationically modified silica and polymers such as vinyl alcohol copolymers, acrylic copolymers, acrylamide/acrylic acid copolymers, polyurethane, styrene copolymers and styrene acrylic copolymers which are inherently water soluble or dispersible (col. 4, lines 21-51) and discloses the ratio of pigment to binder at col. 7, lines 34-35. In light of the attention the reference pays to the cationic nature of materials used, it would have been obvious to one of ordinary skill in the art to control the zeta potential and pH of these compositions.

The coating weight of claim 15 is conventional in the art and consistent with the examples of the reference. The adhesion promoting layer of the reference meets the limitations of applicants' claims 17-19 to an ink receptive underlayer. Once again, coating weights for these layers are conventional and consistent with the examples. The substrate as disclosed by the reference is polyester (see col. 3, lines 25-48).

3. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght et al (6,887,536) as relied upon above, and further in view of Kaneko et al. (2001/0004487). The primary reference is directed to recording materials with transparent supports. Generally, such media require all of the properties necessary for ink jet recording onto an opaque support and additional properties as well, because the image may be viewed from either side, image density must be uniform, and the support

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is non-absorptive. Therefore, coating useful for transparent supports would be expected to be useful on opaque or absorptive supports as well. Consequently, it would have been obvious to one of ordinary skill in the art to include the coatings of the primary reference on any conventional substrate for ink jet recording.

The secondary reference discloses an ink jet recording material having one or more coating layers thereon and coating compositions for formation of the layers [0017, 0031]. The substrate may be paper with a basis weight of 30-250 g/m² [0050-0054]. The reference does not specifically disclose the water absorption of a water-absorptive support [0049]. However, these supports, conventionally paper, are well known in the art, as is the importance of the property of water absorption when imaging with aqueous ink jet inks. It would have been obvious to one of ordinary skill in the art to determine porosity for the support in order to achieve desired drying times and drying characteristics. In addition, the reference discloses that the surface may be a gloss or matte surface but does not disclose gloss values [0057]. This is another property that is well recognized in the art as well as by the applied reference. It would have been obvious to one of ordinary skill in the art to determine the glossiness of the support, by modification of additives or by gloss or matte treatments, in order to yield a desired level of gloss in the medium for the intended function of the medium. Support materials are set forth at [0050-0055].

4. Claims 1, 8, 9, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght et al (6,887,536) as relied upon above, and further in view of Morris et al. (2003/0003277). The primary reference is directed to recording

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materials with transparent supports. Generally, such media require all of the properties necessary for ink jet recording onto an opaque support and additional properties as well, because the image may be viewed from either side, image density must be uniform, and the support is non-absorptive. Therefore, coating useful for transparent supports would be expected to be useful on opaque or absorptive supports as well. Consequently, it would have been obvious to one of ordinary skill in the art to include the coatings of the primary reference on any conventional substrate for ink jet recording.

The secondary reference discloses an ink jet recording medium having an ink receptive layer containing fumed silica. The reference teaches that it is known to use metal sheets as supports for ink jet recording media. Based upon this teaching it would have been obvious to one of ordinary skill in the art to include a metal sheet as the support in order to render the support reflective. The reference also discusses the net charge of the fumed silica used therein and controlling the zeta potential of the particles so that the zeta potential and the charge on the particles are positive. Since positively charged particles will inherently have a positive zeta potential, the examiner believes that the primary reference inherently possesses the property of claim 9. At any rate, the secondary reference identifies the property as known in the art, the importance of the property [0030], and gives specific values for zeta potential in the examples. Based upon the disclosures of this reference, it would have been obvious to one of ordinary skill in the art to render the fumed silica of the reference sufficiently cationic in order to yield a sufficient level of cationic charge to counterbalance the anionic charge of an ink jet recording ink. With respect to coating pH, the reference examples also teach pH

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values for the coating layers of an ink jet recording material and the reference teaches the importance of controlling coating pH in order to prevent flocculation or coagulation of the coating composition [0036]. Based upon this teaching, it would have been obvious to one of ordinary skill in the art to control the pH of the coating compositions of the primary reference so that coating is accomplished without flocculation or coagulation.

5. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght et al (6,887,536) as relied upon above and further in view of Field et al. (6,420,039). The reference teaches that fumed silica for inclusion on recording media may be made cationic and have its zeta potential controlled by treatment with alumina (see fig. 1, col. 3, lines 51-56, col. 6, line 54 to col. 7 lines 17). Based upon this teaching, it would have been obvious to one of ordinary skill in this art to include aluminum treated silica as the silica of the primary reference as a means of modifying its zeta potential and rendering the silica cationic.

6. Claims 16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght et al (6,887,536) as relied upon above and further in view of Liebler et al. (5,756,212). The secondary reference teaches that metal coated supports are known in the art for creating a reflective recording medium (see col. 1, line 26- col. 2, line 40). It would have been obvious to one of ordinary skill in the art to include such a support to achieve an optical effect as taught by Liebler et al.

7. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.


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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela Schwartz whose telephone number is (571) 272-1528.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRSchwartz
September 12, 2005


PAMELA R. SCHWARTZ
PRIMARY EXAMINER